



Operating System

Lab 04

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Task 1

```
#include <stdio.h>

int main() {
    int year;
    printf("Enter a year: ");
    scanf("%d", &year);

    if ((year % 4 == 0 && year % 100 != 0) || (year % 400 == 0)) {
        printf("%d is a leap year.\n", year);
    } else {
        printf("%d is not a leap year.\n", year);
    }

    return 0;
}
```

```
ubuntu@ubuntu:~/lab_05$ gcc -o task1.o task1.c
ubuntu@ubuntu:~/lab_05$ ./task1.o
Enter a year: 2004
2004 is a leap year.
```

Task 2

```
#include <stdio.h>

int main() {
    int n;
    int factorial = 1;

    printf("Enter a positive integer: ");
    scanf("%d", &n);

    if (n < 0) {
        printf("Factorial is not defined for negative numbers.\n");
        return 0;
    }
    for (int i = 1; i <= n; ++i) {
        factorial *= i;
    }

    printf("Factorial of %d = %d\n", n, factorial);
    return 0;
}
```

```
ubuntu@ubuntu:~/lab_05$ gcc -o task2.o task2.c
ubuntu@ubuntu:~/lab_05$ ./task2.o
Enter a positive integer: 7
Factorial of 7 = 5040
```

Task 3

```
#include <stdio.h>

int main() {
    int a, b, temp;

    printf("Enter first number (a): ");
    scanf("%d", &a);
    printf("Enter second number (b): ");
    scanf("%d", &b);

    temp = a;
    a = b;
    b = temp;

    printf("After swapping:\n");
    printf("a = %d\n", a);
    printf("b = %d\n", b);

    return 0;
}
```

```
ubuntu@ubuntu:~/lab_05$ ./task3.o
Enter first number (a): 5
Enter second number (b): 4
After swapping:
a = 4
b = 5
```

Task 4

```
#include <stdio.h>

int main() {
    int num1, num2, sum, product;

    printf("Enter first number: ");
    scanf("%d", &num1);

    printf("Enter second number: ");
    scanf("%d", &num2);

    sum = num1 + num2;
    product = num1 * num2;

    printf("Sum = %d\n", sum);
    printf("Product = %d\n", product);

    return 0;
}
```

```
ubuntu@ubuntu:~/lab_05$ gcc -o task4.o task4.c
ubuntu@ubuntu:~/lab_05$ ./task4.o
Enter first number: 13
Enter second number: 12
Sum = 25
Product = 156
```

Task 5

```
#include <stdio.h>

int main() {
    printf("Name : Muhammad Shamoil \nRegistraion ID : 232025 \n Age:21 \nDOB : 24th April , 2004");
    return 0;
}
```

```
ubuntu@ubuntu:~/lab_05$ gcc -o task5.o task5.c
ubuntu@ubuntu:~/lab_05$ ./task5.o
Name : Muhammad Shamoil
Registraion ID : 232025
Age:21
DOB : 24th April , 2004
```

Task 6

```
#include <stdio.h>

int main() {
    int num, i;

    printf("Enter a number: ");
    scanf("%d", &num);

    printf("The first 10 multiples of %d are:\n", num);
    for (i = 1; i <= 10; ++i) {
        printf("%d x %d = %d\n", num, i, num * i);
    }

    return 0;
}
```

```
ubuntu@ubuntu:~/lab_05$ ./task6.o
Enter a number: 43
The first 10 multiples of 43 are:
43 x 1 = 43
43 x 2 = 86
43 x 3 = 129
43 x 4 = 172
43 x 5 = 215
43 x 6 = 258
43 x 7 = 301
43 x 8 = 344
43 x 9 = 387
43 x 10 = 430
```